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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,647	06/24/2005	Akihiko Okubora	09792909-6291	8882

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EXAMINER	
KHAN, MEHMOOD B	
ART UNIT	**PAPER NUMBER**
2617	

MAIL DATE	DELIVERY MODE
10/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,647	OKUBORA, AKIHIKO	
	Examiner	Art Unit	
	Mehmood B. Khan	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/25/2006 and 06/24/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 2 rejected under 35 U.S.C. 102(e) as being anticipated by Hsu et al. (US 6,417,807 herein Hsu).

Claim 1, Hsu discloses a wireless communication antenna **(see Abstract)**, Hsu discloses plural antenna element patterns connected through a switch or switches formed on an antenna board **(see Col 4, lines 28-33, where Hsu discloses antenna elements, Col 4, lines 56-64, where Hsu discloses switches)**, and having plural resonance frequencies selected by switching connecting state of the antenna element patterns by the switch or switches **(see Col 1, lines 25-41, Figure 2, el. 300, where Hsu discloses connection of elements with switches)**.

Claim 2, Hsu discloses wherein the switch is comprised of MEMS (Micro-Electro-Mechanical-System) switch element **(see Col 3, lines 54-64, where Hsu discloses switches)**, and is buried in the antenna board comprised of multi-layer substrate **(see Col 6, lines 48-65, Figure 3, where Hsu discloses substrates)**.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (US 6,417,807 herein Hsu) in view of Jackson et al. (US 6,061,025 herein Jackson).

Claim 3, Hsu discloses a wireless communication apparatus comprising: a wireless communication antenna including plural antenna element patterns connected through a switch or switches formed on an antenna board **(see Col 4, lines 28-33, where Hsu discloses antenna elements, Col 4, lines 56-64, where Hsu discloses switches)**, and having plural resonance frequencies selected by switching connecting state of the antenna element patterns by the switch or switches **(see Col 1, lines 25-41, Figure 2, el. 300, where Hsu discloses connection of elements with switches)**.

Hsu does not disclose "plural communication circuits having communication bands different from each other, which are connected to the wireless communication antenna; and a control unit for performing, in accordance with a communication band used, a control to select the communication circuit, and to select the resonance frequency of the wireless communication antenna".

Jackson discloses plural communication circuits having communication bands different from each other, which are connected to the wireless communication antenna **(see Col 8, lines 38-43, Figure 14, where Jackson discloses different frequencies and radiating**

strips), Jackson discloses a control unit for performing, in accordance with a communication band used, a control to select the communication circuit, and to select the resonance frequency of the wireless communication antenna (**see Col 3, lines 41-47, where Jackson discloses controlling the frequency for use with the antenna**).Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hsu with the teachings of Jackson so as to control the antenna to a desired frequency (**Col 2, lines 22-26**).

Claim 4, Hsu does not disclose, "wherein the control unit performs a control to automatically determine the communication band used in accordance with operation mode which can be set in advance to select the communication circuit, and to select the resonance frequency of the wireless communication antenna".

Jackson discloses wherein the control unit performs a control to automatically determine the communication band used in accordance with operation mode which can be set in advance to select the communication circuit, and to select the resonance frequency of the wireless communication antenna (**see Col 17, lines 30-44, where Jackson discloses tuning to desired frequency due keyline commands**).

Claim 6, as analyzed with respect to the limitations as discussed in claim 2.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (US 6,417,807 herein Hsu) in view of Jackson et al. (US 6,061,025 herein Jackson) in view of Saunders et al. (GB 2354115A herein Saunders).

Claim 5, Hsu in view of Jackson do not disclose "wherein the control unit performs a control to automatically determine the communication band used on the basis of signal reception intensities obtained from the respective communication circuits to select the communication circuit, and to select resonance frequency of the wireless communication antenna".

Saunders discloses wherein the control unit performs a control to automatically determine the communication band used on the basis of signal reception intensities obtained from the respective communication circuits to select the communication circuit, and to select resonance frequency of the wireless communication antenna **(see Page 12, lines 4-10, where Saunders discloses switching to different frequencies and S/N+I)**. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hsu in view of Jackson with the teachings of Saunders so as to improve the handling of the signal **(see Page 5, lines 3-6)**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehmood B. Khan whose telephone number is 571-272-9277. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for

unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MBK

Mehmood B. Khan
Examiner
Art Unit 2617

GEORGE ENG
SUPERVISORY PATENT EXAMINER